REPUBLIC OF THE PHILIPPINES

EDICT OF GOVERNMENT

PNS/PAES 124 (2004) (English): Agricultural Machinery -Wal king-Wpe Agricultural Tractor - SpecificationsP art 3r SpecialT ype (Float-AssisTt iller)

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PHILIPPINE NATIONAL STANDARD

PNS/PAES 124:2004
(PAES published 2002)

Agricultural Machinery –Wa1king-type Agricultural Tractor – Specifications Part 3: Special Type (Float-Assist Tiller)

DEPARTMENT OF TRADE & INDUSTRY PHILIPPINES

BUREAU OF PRODUCT STANDARDS

Foreword

The formulation of this national standard was initiated by the Agricultural Machinery Testing and Evaluation Center (AMTEC) under the project entitled "Enhancing the Implementation of AFMA Through Improved Agricultural Engineering Standards" which was funded by the Bureau of Agricultural Research (BAR) of the Department of Agriculture (DA).

This standard has been technically prepared in accordance with PNS 01-4:1998 (ISO/IEC Directives Part 3:1997) – Rules for the Structure and Drafting of International Standards.

The word "shall" is used to indicate requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted.

The word "should" is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that certain course of action is preferred but not necessarily required.

In the preparation of this standard, the following documents/publications were considered:

AMTEC Test Reports on Walking-type Agricultural Tractors (Float-assist tiller)

Manaligod, H.T. and R.E. Stickney. *Puddling-type Floating Power Tiller for Small-scale Rice Farms.* Agricultural Mechanization in Asia, Africa and Latin America (AMA) vol.22 No.4. 1991

International Organization for Standardization (ISO) 3789-2:1982 – Tractors, machinery for agriculture and forestry, powered lawn and garden equipment – Location and method of operation of operator's controls- Part 2: Controls for Agricultural tractors and machinery.

Republic Act No. 7394 otherwise known as "The Consumer Act of the Philippines" enacted on July 22, 1991.

Agricultural Machinery – Walking-type Agricultural Tractor – Specifications
Part 3: Special Type (Float-Assist Tiller)

1 Scope

This standard specifies the requirements for a special walking-type agricultural tractor which is equipped with flotation structure.

2 References

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this National Standard:

PAES 102: 2000, Agricultural Machinery – Operator's Manual – Content and Presentation

PAES 103:2000, Agricultural Machinery – Method of Sampling

PAES 111:2000, Agricultural Machinery – Walking-Type Agricultural Tractor – Methods of Test

3 Definitions

For the purpose of this standard the following definitions shall apply:

3.1
float-assist tiller
a special type of walking-type agricultural tractor with a front-mounted tilling wheel and equipped with a flotation structure commonly used in waterlogged fields (see Figure 1)

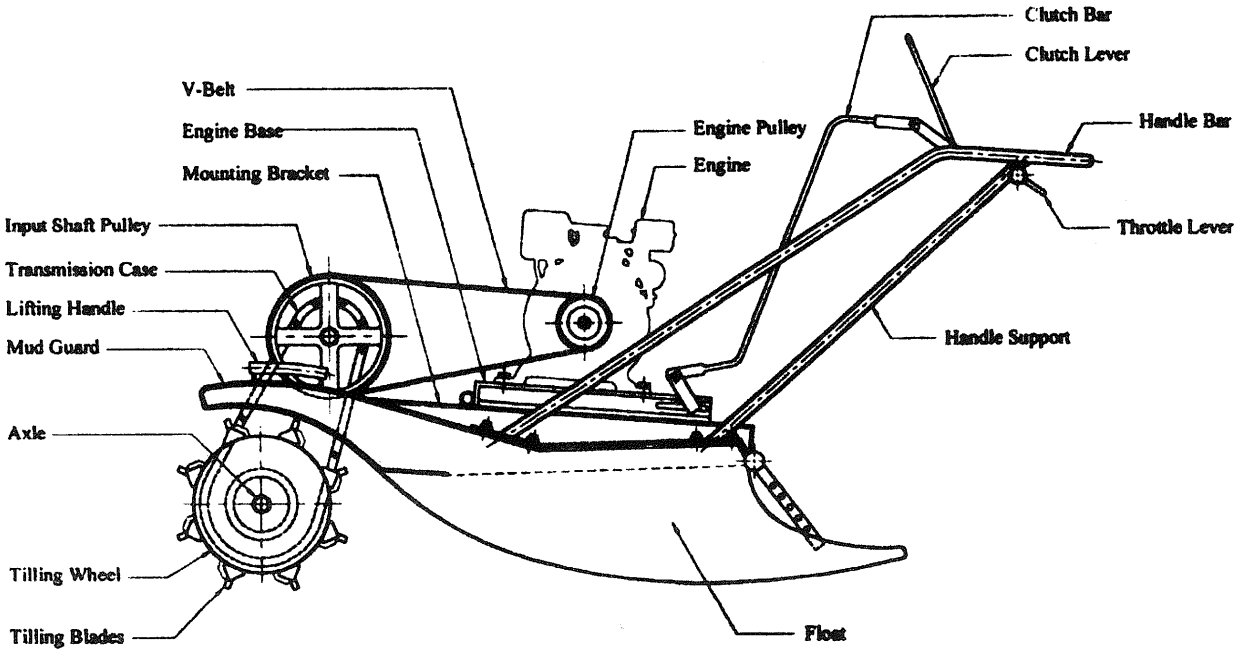


Figure 1 – Float-Assist Tiller and its Components

3.2
flotation structure
float
hull
component of float-assist tiller which provides buoyancy for the tiller

3.3
tilling wheel
consists of a single or pair of wheels with radially mounted tilling blades attached to a common shaft or axle, supported and powered by the transmission

3.4
walking-type agricultural tractor
hand tractor
pedestrian tractor
self-propelled machine having a single axle designed primarily to pull and propel trailed or mounted agricultural implements and machinery

4 Materials of Construction

4.1 The tractor shall be generally made of steel materials.

4.2 At least ISO chain number 10A-1 (ANSI chain number 50) shall be used for the chain and sprocket transmission system for tractor powered by gasoline engines ranging from 3.73 kW – 5.22 kW. With engines greater than 5.22 kW, at least ISO chain number 12A-1 (ANSI chain number 60) shall be used.

4.3 The handle bar shall be made of steel pipe with a minimum wall thickness of 3 mm and with a minimum outside diameter of 25 mm.

5 Controls

5.1 Throttle Lever

5.1.1 This shall be accessible to the operator's right-hand side of the handle bar.

5.1.2 Types of throttle lever

5.1.2.1 Vertical type

For this type, the throttle lever is pushed forward to increase engine speed and pulled rearward to decrease engine speed.

5.1.2.2 Horizontal Type

For this type, the throttle lever is pulled to the left to increase engine speed and to the right to decrease engine speed.

5.2 Main Clutch Lever

5.2.1 This shall be accessible to the operator's left-hand side of the handle bar.

5.2.2 In the case of a vertical lever, the lever shall be pushed forward to operate the tractor and shall be pulled rearward to stop the tractor.

5.2.3 In the case of a horizontal lever, the lever shall be pushed upward to operate the tractor and shall be pulled downward to stop the tractor.

6 Performance Requirements

The tractor when tested in accordance with PAES 111 shall conform to the following requirements:

6.1 The peak transmission efficiency of the tractor shall be at least 80%.

6.2 The manufacturer's specified field capacity at tractor's forward speed range of 2.5 km/h to 4 km/h for quality tillage shall be attained.

6.3 The noise emitted by the tractor measured 50 mm away from the operator's ear level shall not be more than 92 db (A). *

6.4 The tractor shall have no breakdowns/malfunctions (i.e. failure of components, etc) during 5-hour continuous running test.

7 Other Requirements

7.1 For operator's safety, belt guard or cover shall be provided.

7.2 Mechanism for transmission belt adjustment shall be provided.

7.3 Mechanism for handle bar height adjustment shall be provided.

7.4 Mechanism for automatic disengagement of power transmission shall be provided.

8 Workmanship and Finish

8.1 The tractor shall be free from manufacturing defects that may be detrimental to its operation.

8.2 Any uncoated metallic surfaces shall be free from rust and shall be painted properly.

8.3 The tractor shall be free from sharp edges and surfaces that may injure the operator.

9 Warranty for Construction and Durability

9.1 Warranty against defective materials and workmanship shall be provided for parts and services except on consumable maintenance parts such as belts within six (6) months from the purchase of the tractor.

9.2 The construction shall be rigid and durable without breakdown of its major components (i.e. transmission systems, etc) within six (6) months from purchase by the first buyer.

10 Maintenance and Operation

10.1 Each tractor unit shall be provided with the following basic hand tools: three (3) pieces open wrenches; one (1) piece each of Philips and flat screw driver; and one (1) piece adjustable wrench.

10.2 An operator's manual, which conforms to PAES 102, shall be provided.

* Allowable noise level for six (6) hours of continuous exposure based on Occupational Safety and Health Standards, Ministry of Labor. Philippines.1983.

11 Sampling

The tractor shall be sampled for testing in accordance with PAES 103.

12 Testing

Sampled tractor shall be tested in accordance with PAES 111.

13 Marking and Labeling

Each tractor shall be marked in English Language with the following information using a plate, stencil or by directly punching it at the most conspicuous place:

13.1 Registered Trademark of the Manufacturer

13.2 Brand

13.3 Model

13.4 Serial number

13.5 Name and address of the manufacturer

13.6 Country of manufacture (if imported) / "Made in the Philippines" (if manufactured in the Philippines)

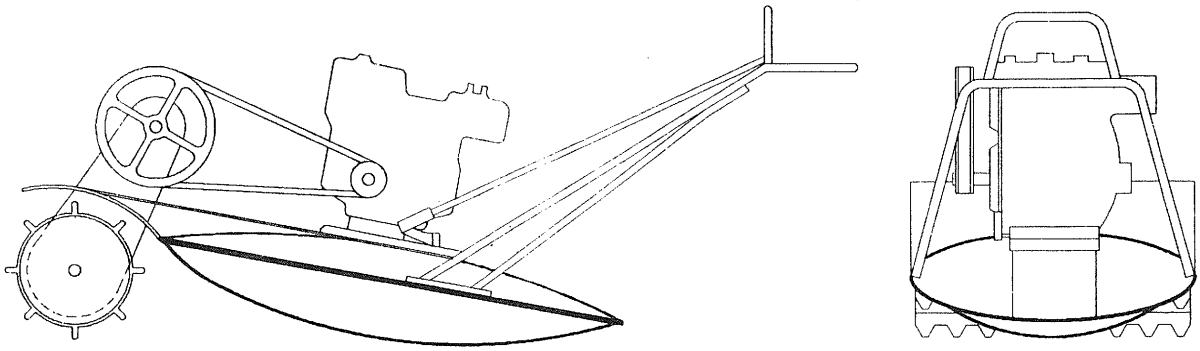
13.7 Power requirement, kW

13.8 Safety/precautionary markings

Annex A
(Informative)

Common Designs of Flotation Structure

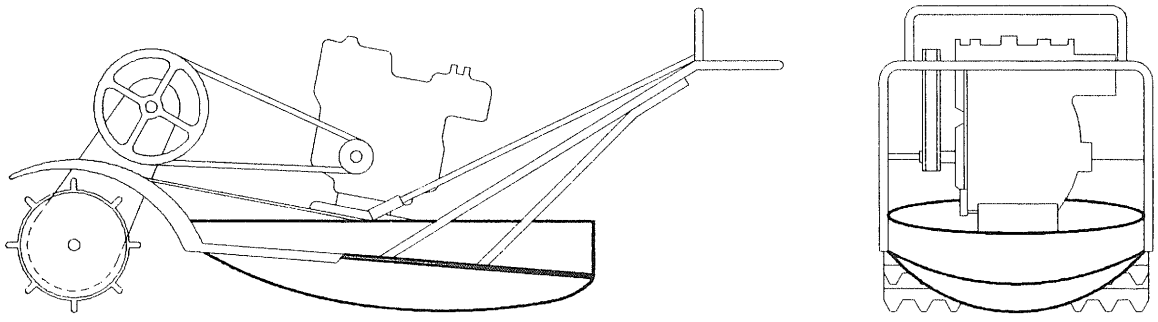
A.1 Elliptical-Shaped



SIDE VIEW REAR VIEW

Figure A1

A.2 Boat Type



SIDE VIEW REAR VIEW

Figure A2

A.3 Saucer Type

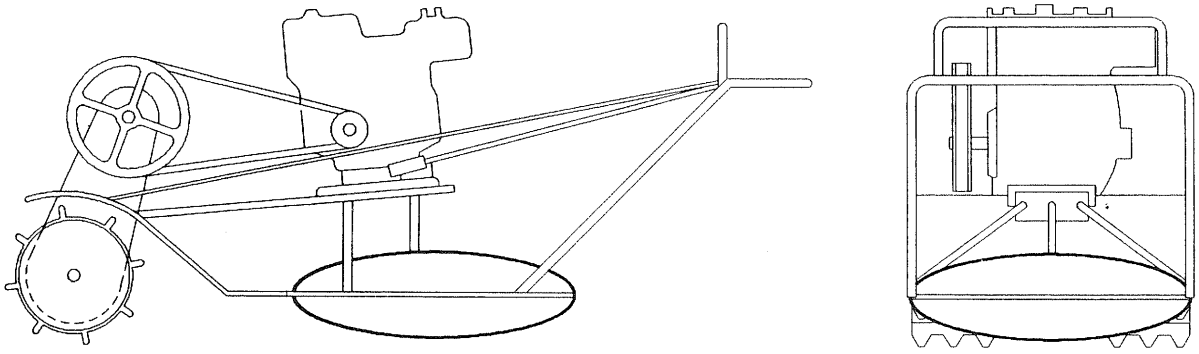


Figure A3

A.4 Pontoon Type

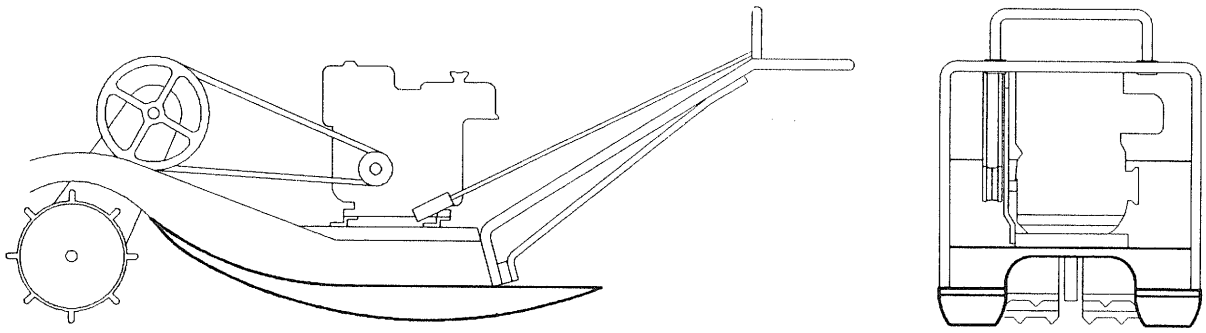


Figure A4